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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/530,967      | 05/09/2005  | Dietmar Berger       | SB_516              | 2252             |

24131 7590 12/20/2006  
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| EXAMINER |
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TALBOT, MICHAEL

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| ART UNIT | PAPER NUMBER |
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3722

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 12/20/2006 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                               |                               |  |
|------------------------------|-------------------------------|-------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/530,967 | Applicant(s)<br>BERGER ET AL. |  |
|                              | Examiner<br>Michael W. Talbot | Art Unit<br>3722              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                                  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

## DETAILED ACTION

### *Claim Objections*

1. Claim 31 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 31 directly depends from claim 28. Claim 28 recites the claim limitation of "said cutting head is an interchangeable cutting insert". Claim 31 recites the claim limitation of "a cutting insert configured for mounting to the cutting tool". If the cutting head of claim 28 were "an interchangeable cutting insert", then by definition the cutting insert would need to be "configured" for interchangeability, therefore rendering the cutting insert as being "configured for mounting to the cutting tool".

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 24-26 and 29-31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding claims 24-26, 29 and 30, the phrases "about" and "substantially" render the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). For examination purposes, any prior art that explicitly or implicitly teaches a angle and/or shape reasonably close to or approximate to the claimed angles and/or shape, is broadly interpreted and best understood by the Examiner to read on that claim.

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5. Regarding claim 31, it is unclear as to the Applicant's intent, specifically whether claim 31 is to cover the combination of the cutting insert and the cutting tool (which by the way is already done through claim 28) or a subcombination reciting the limitations of only the cutting insert or something entirely different.

***Claim Rejections - 35 USC § 102 and 35 USC § 103***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 21-26,28 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Salm et al. '988. Salm et al. '988 shows in Figures 1 and 2 a cutting tool comprising a drill shank (2) defining a drill axis (26), an end, and an interchangeable cutting head (1) configured for mounting (via hole 21) and being disposed at said end having a straight front cutting edge (8) running substantially transversely with respect to the drill axis, being disposed to cut at least as far as said drill axis, and enclosing therewith an angle less than 90° (col. 7, lines 2-8). Salm et al. '988 further shows the cutting head having an adjacent straight lateral cutting edge (7) for cutting the wall of a bore and enclosing an angle slightly more than 90° with a perpendicular to said drill axis (edge 7 slanted outwardly away from end of drill as viewed in Fig. 1) and merging into a straight rear cutting

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edge (9) running substantially transversely with respect to said drill axis. Salm et al. '988 further shows the lateral cutting edge being formed on a section (4) of said cutting head projecting from said drill shank by a height (approximately 30° as viewed in Fig. 1) having a value between 5% and 40% of a drill diameter, a width (approximately 30° as viewed in Fig. 1) having a value between 5% and 40% of the drill diameter, and a ratio of height/width (1:1 as viewed in Fig. 1) within a range from 1:0.7 to 1:1.3. Salm et al. '988 further shows the rear cutting edge enclosing an angle less than 90° with said drill axis (edge 9 slanted downward toward end of drill as viewed in Fig. 1 resulting in an approximate 89° angle with said drill axis).

If Applicant disagrees with Examiner's position relative to the claimed angles, Salm et al. '988 discloses the claimed invention except for the specific recited angles of "said front cutting edge encloses an angle of about 89.5° with said drill axis", "said lateral cutting edge encloses an angle substantially 91° with the perpendicular to said drill axis", and "said rear cutting edge encloses an angle of about 89° with said drill axis". It would have been obvious to one of ordinary skill in the art at the time of the invention was made to select a particular angle, for the purpose of improved drill stability by providing a slight relief surface because it has been held that discovering an optimum value of a result effective variable involves only routine experimentation.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Salm et al. '988 in view of Holmes et al. '672. Salm et al. '988 lacks the front cutting edge having a cutting edge section beyond said drill axis enclosing an angle between 5° and 20° with the perpendicular to said drill axis. Holmes et al. '672 shows in Figures 1 and 4 an interchangeable cutting insert (C) having a front cutting edge (at 23) having a cutting edge section (32) extending beyond said drill axis (20) enclosing an angle between 5° and 20° with the perpendicular to said drill axis. In view of this teaching it would have been obvious to one of ordinary skill in the art to modify the cutting insert of Salm et al. '988 to include a front cutting edge having a cutting edge section extending beyond said drill axis enclosing an angle between 5° and 20° with the perpendicular to said drill axis as taught by Holmes et al. '672 to provide a cutting edge relief surface for efficient chip/debris removal, thus increasing the stability and useful life of the cutting insert by the reducing binding of the cutting tool.

11. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salm et al. '988 in view of JP 10156604. Salm et al. '988 lacks the interchangeable cutting insert being formed as a reversible cutting plate with a substantially rectangular and/or square outline formed with two projecting sections disposed opposite each other in an inverted mirror-image relationship. JP 10156604 shows in Figure 1 an interchangeable cutting insert (2) being formed as a reversible cutting plate with a substantially rectangular and square outline (Abstract) formed with two projecting sections (3) disposed opposite each other in an inverted mirror-image relationship. In view of this teaching it would have been obvious to one of ordinary skill in the art to modify the cutting insert of Salm et al. '988 to include a reversible, substantially square cutting plate formed with two projecting sections disposed opposite each other in an inverted mirror-image relationship as taught by JP 10156604 to increase the useful life of the cutting insert and to simplify the interchangeability and manufacturing of the cutting insert.


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**Conclusion**

12. Any inquiry concerning the content of this communication from the examiner should be directed to Michael W. Talbot, whose telephone number is 571-272-4481. The examiner's office hours are typically 8:30am until 5:00pm, Monday through Friday. The examiner's supervisor, Mrs. Monica S. Carter, may be reached at 571-272-4475.

In order to reduce pendency and avoid potential delays, group 3720 is encouraging FAXing of responses to Office Actions directly into the Group at FAX number 571-273-8300. This practice may be used for filling papers not requiring a fee. It may also be used for filing papers, which require a fee, by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Michael W. Talbot of Art Unit 3722 at the top of your cover sheet.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
MWT  
Examiner  
6 December 2006

  
MONICA CARTER  
SUPERVISORY PATENT EXAMINER